

REMARKS/ARGUMENTS

Claims 1, 5-12, and 36-44 are pending. Claim 1 has been amended. Claims 2-4 and 13-35 have been canceled. New claims 36-44 have been added. Support for the amended and new claims is found in the specification. No new matter has been added to the amended or new claims.

Claims 1, 5-9, and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams (5,614,026).

Claims 10 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of Adomaitis et al. (WO 02/08487).

Claims 1, 5-9, and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of Muller et al. (6,537,418).

Claims 10 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Williams in view of Muller and further in view of Adomaitis.

Telephone Interview

The undersigned thanks the Examiner for the helpful telephone interview conducted on December 30, 2006.

Claim Rejections - 35 U.S.C. § 103

Claim 1 has been amended to recite, in part, "a first exhaust conduit [] adapted to receive a first flow of gas" flowing "radially across the upper surface of the wafer to the first exhaust conduit and "a second exhaust conduit [] adapted to receive a second flow of gas passing substantially vertically from the first channel to an upper surface of the wafer and substantially vertically through the second channel, the second flow of gas being independent of the first flow of gas." Support for the claim amendments is provided throughout the specification, for example, at paragraphs [0033] - [0037] and FIG. 3A (reproduced below for the Examiner's convenience), in which in certain exemplary embodiments arrows 312 illustrate vertical flow from the gas distribution showerhead to the upper surface of the wafer and arrows 322 illustrate radial flow across the upper surface of the wafer to the first exhaust conduit. Applicants respectfully submit that neither Williams nor Muller teach or suggest at least the claimed elements in the manner claimed.

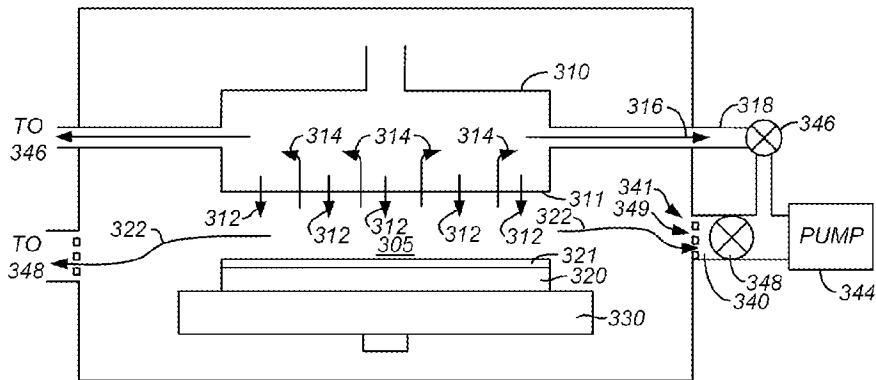


FIG. 3A

As discussed in the amendment filed September 14, 2006 and during the telephone interview, neither Williams nor Muller teach or suggest a first exhaust conduit adapted to receive a first flow of gas flowing radially across the upper surface of the wafer to the first exhaust conduit (e.g., flow 322 in FIG. 3A) and a second flow of gas flowing substantially vertically from the surface of the wafer to the second exhaust conduit (e.g., flow 314 in FIG. 3A), wherein the second flow of gas is independent of the first flow of gas.

Williams appears to show an exhaust path "avoiding flow of the process gas or volatile byproducts laterally across the substrate surface." (Williams, Abstract, col. 3, lines 53-58). Moreover, Muller discusses "small cells of local equilibrium in gas pressure across the surface of the wafer 84, i.e., the partial pressure of etchgas 88 and etchproduct 90 are substantially constant across the wafer." (Muller at col. 5, lines 32-36). Since the partial pressures in Muller are substantially constant across the wafer, there is no mechanism for generating a radial flow of exhaust gas across the upper surface of the wafer. For at least these reasons, claim 1 is in condition for allowance.

Claims 5-12, which depend from claim 1, are in condition for allowance, for at least the reasons discussed in relation to claim 1, as well as for the additional elements they recite.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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